DOCUMENT RESUME

ED 289 167 CS 210 848

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TITLE Assessing the National Writing Project: A Longitudinal Study of Process-Based Writing.
PUB DATE Oct 87
NOTE 38p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Elementary Secondary Education; Instructional Improvement; Language Arts; Parent Attitudes; *Process Education; *Program Effectiveness; *Program Evaluation; Student Attitudes; Teacher Attitudes; Teacher Improvement; Writing Evaluation; *Writing Improvement; *Writing Instruction; Writing Processes; Writing Research
IDENTIFIERS National Writing Project; Oak Ridge Schools TN; Tennessee

ABSTRACT

To evaluate the effectiveness of a new writing curriculum in the Oak Ridge Schools (Tennessee), modeled after the process-oriented National Writing Project, a three-year study of student writing was conducted. The study consisted of evaluating writing samples collected from 90 students in grades 3 through 12 over 3 consecutive years, and surveying by means of annual questionnaires the writing attitudes of students, parents, and teachers. Results from the student attitude surveys show an increase over the second and third year in students' interest in learning about writing, in their level of confidence, and in their association of self-esteem with good writing. A decrease was observed in students' feelings of discomfort about completing writing assignments and in their feelings that they do not write well and that writing is difficult. At the end of the study, students at each grade level were better writers than were previous students in that grade level. Students in classrooms with teachers trained according to the National Writing Project approach performed better on the writing sample than did students in the classrooms of untrained teachers. The teacher survey showed few differences between trained and untrained teachers in attitudes about writing, ranking of writing problems, and assessment of language arts priorities. Some significant differences were found between parent and teacher attitudes. (Recommendations of the writing committee are included, and writing assignments and assessment rubrics are appended.) (JG)

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Assessing the National Writing Project: A longitudinal study of process-based writing

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Introduction

Student writing has long been a concern of teachers and administrators at elementary, junior and senior high levels. School systems as a whole, and individual classroom teachers, have been interested in techniques and approaches to teaching writing that would improve both the students' ability to write and the students' attitude toward writing.

During the 1982-1983 school year, a group of language arts teachers from the various Oak Ridge Schools met to discuss how to teach writing more effectively. The group agreed that a system-wide approach to teaching writing would be more likely to improve student writing than would the approach to writing used at that time, which was each teacher independently developing and implementing his or her own approach to writing. Also, the language arts teachers involved agreed that a system-wide emphasis on writing would encourage teachers to allot more time to teaching writing. After reviewing the literature on the teaching of writing and analyzing several models of teaching writing, the group recommended the adoption of the National Writing Project for writing instruction.

The National Writing Project, based on the Bay Area (San Francisco, CA) Writing Project, increasingly sresses writing as an active "process," as well as emphasizing a "product," the final written assignment. The process consists of five major steps:

1. Pre-writing--The teacher structures activities to help students develop ideas and organize information to use in the written assignment. Activities include reading assignments, brainstorming and mapping.

2. Writing--The student, motivated by the prewriting activity, then writes the assignment. Students consider audience and purpose as they write.

3. Peer Review--Students work either in pairs or in small groups to read and react to each others' writing. Students usually have specific aspects of the writing that they are to analyze. The peer process stresses finding positive aspects of a peer's writing in addition to locating any weaknesses in the student's writing.

4. Revision--The student uses the suggestions made by others, including classmates and, often, the teacher, and revises his or her assignment. This stage involves reorganization and inclusion of new information, as well as correction of spelling and grammatical errors.

5. Evaluation--The teacher evaluates the student's completed assignment.

The National Writing Project is based, as well, on developing the writing abilities of teachers through an intensive inservice or training program. Throughout the training or workshop period, teachers are asked to work through the five-step process as they respond to writing assignments. The premise is that the more comfortable and skilled a teacher is with writing, the more sensitive and specific she can be with students' efforts. A second premise of

the National Writing Project is that by learning to write, students will learn to think and learn in active and responsive ways. This kind of learning is suitable not only for the English classroom, but for all other areas of the curriculum. A final characteristic of teaching writing as a process is the appreciation of a broader audience other than just the teacher. Students focus many final writing products for "publication" whether it be a letter to an editor, a handmade book of writings, a memo, or a newspaper story. The emphasis on audience and final products demands correct use of grammar and the ultimate goal: clear communication.

During the fall of 1983, 18 teachers from the Oak Ridge Schools were trained in how to teach writing based on the National Writing Project. Following the one-week workshop, the 18 teachers, representatives from each school in the system, were to use the process approach to writing instruction in their classrooms. In addition, this group of teachers was named to serve on the newly formed Writing Committee. This committee, chaired by Ms. Jinx Bohstedt, met regularly throughout the next three years to discuss their experiences in using the process approach to teaching writing and to discuss how writing instruction could be improved in the school system as a whole.

The Writing Committee members agreed that one problem in assessing the effectiveness of any new curriculum is determining if, in fact, the new teaching approach has caused any change in student learning or student attitudes. Therefore, the group agreed that a research study of student writing in the school system could help determine if the adoption of process-based writing instruction resulted in improvements in student writing and student attitudes about writing.

Professor Kathy Krendl, assistant professor in the Department of Telecommunications at Indiana University (Bloomington, Indiana), agreed to serve as the outside evaluator for a three-year study of student writing. Working with Dr. Krendl, the Writing Committee determined that the study should consist of several components: 1) collecting a sample of student writing for three consecutive years and analyzing the writing samples to evaluate the writing; 2) collecting information on student attitudes about writing by having students complete a questionnaire about writing each year; 3) collecting information on parent attitudes about writing by having the parents complete a mail questionnaire each year; and 4) collecting information from teachers, using self-administered questionnaires, on their attitudes about writing and techniques they used in teaching writing.

Dr. Krendl drew a random sample of 90 students from each grade level--third through tenth. The sample represented all ability levels of students, including students who were in resource rooms or mainstreamed into regular classrooms. The 90 students from each grade level and their parents were involved in the yearly analysis.

The Writing Committee determined that all students in the school system, grades 3 through 12, not just the students in the three-year study, should participate in the yearly writing sample. Thus, the school system obtained a sample of every student's writing and all students had the opportunity to practice timed writing, a requirement for some standardized tests. In addition, students included in the sample were not sensitized to being selected; that is, their writing was done in the naturalistic classroom setting with all of their

classmates also participating.

For three years, May of 1984, 1985 and 1986, every language arts teacher was asked to set aside a pre-determined day to have all students take part in the writing sample. Each teacher was provided with directions and with the topic that the students were to write on. To help standardize the writing samples, all teachers were asked to follow a set procedure in introducing the assignment and to allot the same amount of time to the assignment to help standardize the writing samples.

The topics for the writing samples were determined by the Writing Committee. In selecting a writing topic, the committee tried to design topics that all students could write about during one class period without needing to do any background preparation. The Writing Committee members also tried to structure the writing prompts (the exact wording that the teachers would use with their students) to match the students' writing experiences at the various grade levels. Consequently, students in grades 9-12 were asked to write multi-paragraph papers, whereas students below ninth grade were not asked to write such extensive papers. Topics and instructions for each writing assignment are presented in Appendix A.

Each year after the students completed the writing sample, the papers by students in the research study were pulled. A team of teachers, representing the three major grade levels--elementary school, junior high school and senior high school--read and rated the writing samples.

The teachers used a rubric (a set of standard criteria) in assessing the samples. All writing samples, regardless of the student's grade level, were evaluated based on the same rubric (See Appendix B). The same rubric was used in evaluating the writing samples for all three years of the study to establish consistency in evaluation.

Prior to beginning their individual scoring of writing samples, the team members practiced using the rubric in evaluating student writing. This practice helped the team develop inter-reader reliability, meaning that all members of the team would evaluate and score the samples in a similar fashion.

Each paper in the sample was read and scored holistically. In other words, a teacher would read the paper in its entirety and, using the criteria of the rubric, assign the paper a score of 1 (low) to 6 (high). The teacher would make no marks on the paper and would not discuss it with the other team members. Each paper was read by two teachers. If the two teachers did not give the paper the same numerical score, a third teacher would read and score the paper. The paper would receive the score agreed on by two of the three teachers.

The papers in the sample and their scores were sent each year to Dr. Krendl. She compiled the scores from the three years of writing samples, along with the data from the students', parents' and teachers' questionnaires.

Part 1

Results from the Student Sample

Student Attitudes about Writing

Each year one section of the students' questionnaire was a series of statements about writing. These statements asked about students' interest in a variety of areas--learning about writing, confidence in writing ability, importance of mechanics in writing, value of writing as a skill, and value of writing in determining self-esteem. Each student responded to each statement on a scale of one (strongly disagree) to five (strongly agree). The mean scores of all students' responses to each statement were tabulated for each of the three years of the study. The scores of the second and third years were compared to the scores of the first year to determine any changes in student attitudes toward writing. Table 1-1 indicates the direction and degree of change from the first year to the third year of the study.

The first set of statements dealt with the student's interest in learning about writing. In both the second and third year of the study, interest in learning about writing increased significantly. The other significant result in this group of statements was the decrease in students' feeling that "learning about writing makes me uncomfortable." By the third year of the study, students were significantly more comfortable in completing writing assignments.

In a similar trend, the next group of statements demonstrates significant decreases in students' feelings that they do not write well and that writing is difficult. Again, their level of confidence seems to have improved regarding their writing.

In terms of the importance of mechanics (grammar and spelling), no changes occurred during the course of the study. Furthermore, there were no significant changes in students' ratings of the value of writing as a skill. However, it is important to note in both groups of statements that students' ratings of the skills involved in writing and the importance of writing as a skill are quite high even in the first year. It would be difficult to move them significantly higher on these ratings. That is, at the outset, students already considered writing and its related skills as an important part of their education in preparing them for future jobs.

Finally, this table demonstrates that consistent significant changes resulted during the course of the study in terms of the self-esteem students associated with good writing. In their estimates, parents and teachers (but not their friends), as well as they, themselves, would all be proud if they were good writers. This finding suggests that one result of adopting the process-based writing curriculum was that a clear message went out to students: good writing is something to be proud of. However, we cannot conclude that the curricular innovation was directly responsible for these changes because they occurred for all students, not only students who were exposed to teachers trained in process-based writing instruction. Therefore, we need to test for differences in writing attitudes between students in the classrooms of trained and untrained teachers.

When we examine the specific effects of teacher training on student attitudes about writing, rather than the overall changes over time, the findings are less consistent and clear. Very few significant differences emerge as is illustrated in Tables 1-2 and 1-3, both of which examine the effects of teacher training on student attitudes about writing. Table 1-2 examines the effects on attitudes each year of having a trained or an untrained teacher. Thus, this table poses the question: What difference did having a trained teacher make at any one point in time during the three years of the study?

Table 1-3 presents the cumulative effects of having trained teachers over the three years of the study. Because different groups of teachers were trained at different times, it was possible for students to have three full years of instruction from trained teachers, or no exposure to trained teachers during the course of the study. The results presented in this table respond to the question: What were the cumulative effects of having trained teachers on student attitudes about writing?

As these tables illustrate, in general, the trends of change over the three years of the study are positive where one would expect them to be positive, and negative where one would expect them to be negative, but these differences are not significant. That is, they could be explained by chance variation, and cannot be attributed to the effect of teacher training. For example, in Table 1-2, students' responses to the statement, "I would like the idea of taking writing classes," are more positive each year for students with trained teachers than for students with untrained teachers, but we cannot conclude that teacher training accounts for these differences because they are not consistently significant. Table 1-3 shows similar results. Again, there are few consistent differences between students with trained and untrained teachers.

Table 1-1
Student Attitudes about Writing

Students were asked to respond to the following statements. The answers ranged from 1 (strongly disagree) to 5 (strongly agree).

	First Year	Second Year	Third Year
Interest in learning about writing			
I would like to learn more about writing.	3.23	3.47*	3.52*
I would like the idea of taking writing classes.	2.67	2.63	2.67
I enjoy learning about writing.	2.92	2.93	2.94
Learning to write can be fun.	3.16	3.33	3.18
Learning about writing makes me uncomfortable.	3.70	3.79	2.17*
Confidence in writing ability			
I feel good about my writing ability.	3.60	3.75	3.75
I am not the kind of person who writes well.	3.30	3.56	2.42*
It is difficult for me to write.	3.71	3.66	2.37*
Importance of mechanics in writing			
In order to be a good writer, you need to be good at grammar.	3.82	3.84	3.97
In order to be a good writer, you need to be good at spelling.	4.07	3.88	3.88
Value of writing as a skill			
Every student should have some understanding of writing.	4.27	4.34	4.31
Knowing about writing will help me get a better job.	4.18	4.08	4.10
Value of writing in self-esteem			
If I were a good writer, my parents would be proud of me.	2.99	3.55*	3.62*
If I were a good writer, my teacher would be proud of me.	3.43	3.85*	3.97*
If I were a good writer, my friends would be proud of me.	2.48	2.53	2.50
If I were a good writer, I'd be proud of myself.	3.60	4.05*	4.00*

*$p<.05$ for differences compared to First Year ratings.

Table 1-2
Student Attitudes about Writing by Teacher Training

	Year 1		Year 2		Year 3	
	U[1]	T[1]	U[1]	T[1]	U[1]	T[1]
Interest in learning about writing						
I would like to learn more about writing.	3.20	3.38	3.45	3.51	3.58	3.52
I would like the idea of taking writing classes.	2.54	2.94*	2.60	2.62	2.60	2.75
I enjoy learning about writing.	2.91	2.94	2.94	3.05	2.85	2.99
Learning to write can be fun.	3.23	3.10	3.49	3.29	3.20	3.16
Learning about writing makes me uncomfortable.	3.68	3.77	3.76	3.88	2.35	2.07
Confidence in writing ability						
I feel good about my writing ability.	3.59	3.58	3.68	3.73	3.68	3.81
I am not the kind of person who writes well.	3.23	3.38	3.58	3.53	2.50	2.37
It is difficult for me to write.	3.72	3.69	3.69	3.51	2.18	2.40
Importance of mechanics in writing ability						
In order to be a good writer, you need to be good at grammar.	3.81	3.84	3.70	3.81	3.71	4.11*
In order to be a good writer, you need to be good at spelling.	4.18	3.99	3.86	3.79	4.00	3.98
Value of writing as a skill						
Every student should have some understanding of writing.	4.31	4.29	4.18	4.42*	4.27	4.42
Knowing about writing will help me get a better job.	4.22	4.17	4.11	3.99	4.10	4.18
Value of writing in self-esteem						
If I were a good writer, my parents would be proud of me.	2.99	2.75*	3.66	3.59	3.75	3.59
If I were a good writer, my teacher would be proud of me.	3.40	3.40	3.77	3.97	3.93	4.07
If I were a good writer, my friends would be proud of me.	2.46	2.46	2.61	2.47	2.55	2.49
If I were a good writer, I'd be proud of myself.	3.71	3.53	4.01	4.11	3.58	4.06*

[1]U refers to untrained teachers each year; T refers to trained teachers each year.

*p<.05 for differences between having trained and untrained teachers.

Table 1-3
Writing Attitudes by Cumulative Teacher Training[1]

	Year 1		Year 2			Year 3			
Level of Teacher Training	0	1	0	1	2	0	1	2	3
Interest in learning about writing									
I would like to learn more about writing.	3.20	3.38	3.41	3.52	3.77	3.75	3.37	3.56	3.64
I would like the idea of taking writing classes.	2.54	2.94*	2.60	2.70	2.89	2.70	2.56	2.69	3.41
I enjoy learning about writing.	2.91	2.94	2.79	3.00	3.39*	3.05	2.80	3.01	3.23
Learning to write can be fun.	3.23	3.10	3.30	3.33	3.59	3.25	3.26	2.97	3.48
Learning about writing makes me uncomfortable.	3.68	3.77	3.80	3.79	3.98	2.25	2.15	2.16	1.68
Confidence in writing ability									
I feel good about my writing ability.	3.59	3.58	3.79	3.62	3.98	3.55	3.95	3.60	4.05
I am not the kind of person who writes well.	3.23	3.38	3.55	3.55	3.75	2.60	2.26	2.44	2.41
It is difficult for me to write.	3.72	3.69	3.78	3.50	3.84	2.30	2.18	2.52	2.71
Importance of mechanics in writing ability									
In order to be a good writer, you need to be good at grammar.	3.81	3.84	3.96	3.83	3.57	3.85	4.02	4.06	4.05
In order to be a good writer, you need to be good at spelling.	4.18	3.99	3.96	3.89	3.41*	3.75	4.32	3.72	3.90
Value of writing as a skill									
Every student should have some understanding of writing.	4.31	4.29	4.22	4.39	4.50	4.05	4.36	4.48	4.32
Knowing about writing will help me get a better job.	4.22	4.17	4.17	4.00	4.05	4.00	4.23	4.14	3.91
Value of writing in self-esteem									
If I were a good writer, my parents would be proud of me.	2.99	2.75*	3.49	3.55	3.64	3.70	3.84	3.32	3.52
If I were a good writer, my teacher would be proud of me.	3.40	3.40	3.71	3.83	4.09	3.75	4.07	4.00	4.10
If I were a good writer, my friends would be proud of me.	2.46	2.46	2.46	2.57	2.50	2.50	2.46	2.39	3.16
If I were a good writer, I'd be proud of myself.	3.71	3.53	3.92	4.13	4.11	3.50	4.03	3.98	4.00

[1]More teachers were trained each year of the study, so that the cumulative teacher training index indicates the number of trained teachers each student had over the course of the three years of the study. Thus, some students had no trained teachers, or a score of 0 on cumulative teacher training, while others had trained teachers all three years, or a score of 3 by the third year.
*$p<.05$ for differences in cumulative teacher training.

Student Attitudes about Writing Problems

Students were also asked to rate the degree to which they had problems with particular aspects of writing. The problems included: putting things in order (organization), knowing how to begin, finding the right words (vocabulary), spelling, following directions, finding errors, grammar, neatness, trying to make it better (rewriting), thinking of a topic to write about, and thinking of what to say on a topic. The three tables below present the results of students' rank order of the extent to which each of these items was a problem in their writing for each year of the study. The grade levels included in the table refer to different students each year, reflecting that most students in the study advanced a grade each year.

As these tables (1-4 through 1-6) demonstrate, students' perceptions of the importance of specific problems in their writing were relatively constant over time. The most consistent finding in all three years is that "following directions" is the least of the students' problems at all grade levels. This item comes in dead last at all grade levels in the first and third year of the study. In the second year, it is always last or next to last. Thus, it appears that in the students' minds, teachers are clear in terms of giving directions for particular writing assignments. Another consistent finding is that perceptions of the importance of particular problems varies according to grade level. For example, "finding a topic" is a very important problem in the lower grades for all three years. In addition, "neatness," "finding errors," and "thinking of what to say on a topic" are perceived as important problems for elementary and middle school writers. As students enter the high school years, the more technical aspects of writing diminish in importance and are replaced by "knowing how to begin" as the most critical problem. "Thinking of a topic" remains important, even in high school. High school students consistently rank "grammar," "neatness," and "spelling" among the least of their problems. Thus, it appears that by this point in their careers, students think they have mastered the basic skills required for writing and are more concerned about content. Because student perceptions of writing problems are so consistent over the three years of the study, it appears that the changes adopted in teaching process-based writing had little impact on the relative importance of particular problems from the students' perspective.

Table 1-4
Rank Order of Writing Problems by Grade
First Year of Study

Fifth	Sixth	Seventh	Eighth	Ninth	Tenth
Topic	Topic	Topic	Topic	Topic	Beginning
Errors	Beginning	Neatness	Beginning	Beginning	Topic
Neatness	Neatness	Beginning	Neatness	What to say	Errors
What to say	What to say	Rewriting	Errors	Neatness	Rewriting
Rewriting	Errors	Errors	What to say	Errors	Organization
Beginning	Vocabulary	What to say	Rewriting	Rewriting	What to say
Spelling	Rewriting	Spelling	Organization	Spelling	Vocabulary
Vocabulary	Spelling	Grammar	Grammar	Vocabulary	Grammar
Organization	Oganization	Vocabulary	Spelling	Grammar	Neatness
Grammar	Grammar	Organization	Vocabulary	Organization	Spelling
Directions	Directions	Directions	Directions	Directions	Directions

Table 1-5
Rank Order of Writing Problems by Grade
Second Year of Study

Fifth	Sixth	Seventh	Eighth	Ninth
Topic	Topic	Topic	Topic	Beginning
What to say	What to say	Rewriting	Beginning	Topic
Errors	Rewriting	Beginning	What to say	Rewriting
Neatness	Errors	What to say	Rewriting	Errors
Rewriting	Neatness	Neatness	Errors	Vocabulary
Vocabulary	Vocabulary	Errors	Vocabulary	Grammar
Grammar	Grammar	Vocabulary	Grammar	What to say
Spelling	Spelling	Grammar	Neatness	Neatness
Beginning	Beginning	Spelling	Organization	Spelling
Organization	Directions	Directions	Spelling	Organization
Directions	Organization	Organization	Directions	Directions

Tenth	Eleventh
Beginning	Beginning
Topic	Topic
What to say	What to say
Vocabulary	Rewriting
Rewriting	Vocabulary
Errors	Grammar
Grammar	Spelling
Spelling	Organization
Neatness	Neatness
Organization	Directions
Directions	Errors

Table 1-6
Rank Order of Writing Problems by Grade
Third Year of Study

Fifth	Sixth	Seventh	Eighth	Ninth
What to say	Topic	Topic	Topic	Beginning*
Errors	What to say	What to say*	Rewriting	Topic*
Topic	Right words	Beginning*	Errors	Errors
Beginning*	Errors*	Errors*	Beginning	What to say
Right words*	Neatness*	Rewriting*	What to say	Rewriting
Spelling*	Rewriting	Right words	Right words	Right words
Rewriting	Beginning	Grammar	Grammar	Grammar
Organization*	Spelling	Neatness	Organization*	Neatness
Neatness*	Grammar	Organization*	Spelling*	Spelling
Grammar	Organization	Spelling*	Neatness	Organization
Directions	Directions	Directions	Directions	Directions

Tenth	Eleventh	Twelfth
Beginning	Beginning	Beginning
Topic	Topic*	What to say
Rewriting*	Rewriting*	Rewriting
What to say*	Errors	Right words
Right words	What to say	Topic
Errors	Organization*	Errors
Spelling	Grammar*	Grammar
Grammar	Right words	Organization*
Neatness	Neatness	Spelling*
Organization	Spelling	Neatness
Directions	Directions	Directions

*Indicates ties

Student Writing Achievement

After the writing samples of those students in the three-year study were holistically assessed, the scores of the papers for each grade level were averaged, providing a score between 1 to 6, with 6 being the highest possible score. Table 1-7 lists the mean scores by grade level. Note that students selected for the study were in grades 3-10 the first year. Consequently, the next year most of those students were in grades 4-11, and the final year, they proceeded to grades 5-12. An important finding of the study is that, at every grade level, the mean score (or the average score) of student writing improved significantly from the first to the third year of the study. This indicates that students at each grade level at the end of the study were better writers than the students in that grade level at the beginning of the study.

This improvement could be attributed to several factors. First, more teachers were trained by the third year of the study; thus, more students received writing instruction from trained teachers, causing improvement in the students' writing ability. Second, the school system, during the three-year period of the study, continued to put emphasis on writing instruction. Due to that emphasis, more language arts teachers put more emphasis on writing in their language arts instruction. As students had more opportunities to write, they became better writers.

It should be noted that, at every grade level, the mean score of student writing dropped for the second year's writing sample. Two main factors may account for this decline. The writing assignment for the second year's writing sample may have caused problems for some students. For the first year's writing assignment, students were asked to write about television. For the third year's assignment, students were asked to write about a person from television, a film or book or a person from their own lives. For the second year's assignment, students were asked to write about a character from a book that they had read. Based on the students' writing on that topic, many students had great difficulty in selecting a character from a book to write about. Some students indicated that they hadn't read any books or couldn't remember a character whom they found admirable. (Of interest to those teachers who evaluated the writing sample for the second year was the fact that S.E. Hinton books, especially The Outsiders, were the most frequently mentioned books.)

Another reason for the lower writing scores for the second year may have been due to the wording of the writing prompt. For the first and third years, students were reminded in the directions given by the teacher to "be specific." Unfortunately, this advice was not included in the second year's prompt, which may have caused some students to be less complete in their writing.

Table 1-7
Writing Achievement by Grade

Grade	Year 1	Year 2	Year 3
3	2.02 (65)	1.33 (3)	
4	2.15 (54)	2.02 (60)	
5	2.30 (53)	1.88 (57)	2.97* (31)
6	2.63 (54)	2.33 (64)	2.98* (41)
7	2.64 (64)	2.31 (49)	3.33* (39)
8	3.09 (45)	2.65 (65)	3.44* (39)
9	3.31 (58)	3.13 (62)	3.65* (43)
10	3.58 (53)	3.40 (60)	4.11* (45)
11		3.40 (50)	4.66* (29)
			4.67* (24)

*Indicates $p<.05$ for differences from Year 1 to Year 3.

When we examined the effects of teacher training on student writing achievement, we found that whether or not the student was in the classroom of a trained teacher made a significant difference in the student's performance on the writing sample. According to the results presented in Table 1-8, students with a trained teacher performed significantly better on the writing sample than did students in the classrooms of untrained teachers.

Cumulative exposure to trained teachers, as indicated in Table 1-9, also made a significant difference in student performance on the writing sample in the first and third years of the study. In both cases, students benefitted from increasing levels of exposure to trained teachers; that is, by the end of the study, those students with three years of language arts instruction from trained teachers wrote significantly better than did those students with 2 years, 1 year or no years of trained instruction. Thus, in terms of writing achievement, both across the board, as demonstrated by Table 1-7, and in terms of the effects of teacher training, as demonstrated by Tables 1-8 and 1-9, the adoption of process-based writing instruction proved to have a positive impact on student writing achievement.

Table 1-8
Effects of Teacher Training on Writing Achievement by Year

Year 1		Year 2		Year 3	
2.69	3.04*	2.31	2.67*	3.25	3.61*

*p<.05

Table 1-9
Effects of Cumulative Teacher Training on Writing Achievement by Year[1]

First Year		Second Year			Third Year			
0	1	0	1	2	0	1	2	3
2.69	3.04*	2.52	2.66	2.89	3.25	3.36	3.71	3.89*

*p<.05

[1]More teachers were trained each year of the study, so that the cumulative teacher training index indicates the number of trained teachers each student had over the course of the three years of the study. Thus, some students had no trained teachers, or a score of 0 on cumulative teacher training, while others had trained teachers all three years, or a score of 3 by the third year.

Part 2

Results from the Language Arts Teachers

Teacher Attitudes about Writing

Teachers were asked to respond to 14 statements related to their attitudes about teaching writing. As Table 2-1 demonstrates, though many of the differences are in the predicted direction (e.g. trained teachers are more likely to say that they enjoy teaching writing), teacher training in process-based writing instruction, in fact, accounted for significant differences on only four of the 14 statements.

The only statement which yielded consistent differences in both the second and third year of the study referred to the importance of grammar in writing. Untrained teachers were significantly more positive in their ranking of the statement, "In order to be good at writing, you need to be good at grammar." This finding may parallel the teachers' ranking of language arts priorities (see Table 2-3), which demonstrates that untrained teachers consistently ranked "Grammar" as the top priority for language arts instruction. Consequently, their agreement that good writers have to be good at grammar is consistent with their view that grammar is very important. The more negative response from the trained teachers regarding the importance of grammar in writing may be a reflection of their acceptance of the philosophy of process-based writing. That is, because students write and then rewrite (catching mechanical spelling and grammatical errors, as well as substantive problems) with the help of peer editing, even students who are weak in grammar skills can ultimately produce good final papers.

In both the second and third years of the study, trained teachers were more positive in their responses to the statement, "Students can learn a lot about writing from their peers," though the difference between trained and untrained teachers was significant only in the second year. Trained teachers also felt in the second year that their students enjoyed writing more than did untrained teachers.

In addition, it is important to note that in the final year of the study when asked about their level of confidence in their writing instruction, trained teachers were significantly more confident than were untrained teachers. In response to the statement, "I am more confident about my writing instruction than I was two or three years ago" significant differences emerge between trained and untrained teachers. These higher scores by trained teachers would indicate that the training in the process-based writing instruction made them more self-assured about their own writing instruction. In contrast, untrained teachers were less confident about the quality and effectiveness of their writing instruction.

Table 2-1
Teacher Attitudes about Writing by Teacher Training

	Second Year		Third Year	
	U	T	U	T
I enjoy teaching writing.	3.38	3.46	3.19	3.30
My students enjoy writing.	2.70	3.08*	2.86	2.72
Knowing about writing will help my students get better jobs.	3.55	3.56	3.68	3.55
In order to be good at writing, you need to be good at grammar.	3.15	2.72*	3.14	2.72*
In order to be good at writing, you need to be good at spelling.	2.45	2.16	2.73	2.52
Students can learn a lot about writing from their peers.	3.15	3.48*	3.27	3.45
In order to teach students how to write, one has to develop one's own skills as a writer.	3.33	3.30	3.23	3.54
My students learn a lot from re-rewriting their papers.	3.11	3.20	3.14	2.93
I try to mark all errors on my students' papers.	2.00	1.85	2.27	2.18
Students can give each other good ideas and suggestions about writing.	3.44	3.40	3.36	3.36e
The texts we use provide good instructions on how to help students re-write their papers.	2.28	1.85	2.05	1.82
I stress the writing process in my teaching.	3.30	3.52	3.36	3.10
I teach writing totally differently than I did two or three years ago.	2.50	2.43	2.32	2.68
I am more confident about my writing instruction than I was two or three years ago.			2.68	+*

*p<.05

Teacher Attitudes about Writing Problems

Teachers were presented with a list of problems specific to teaching writing and were asked to rate each problem in terms of its importance in their own writing instruction. The problems were stated as follows:

Inadequate time to plan appropriate writing activities.
Lack of training in how to teach writing.
Lack of consistency within system on how to teach writing.
Lack of adequate class time to complete writing activities.
Too large a class to teach writing.
Lack of suitable materials to teach writing.
Lack of time to evaluate student writing.
Lack of agreement among teachers on standards for student writing.

The results, presented in Table 2-2 below, demonstrate that each year of the study, teachers had the same number one problem related to teaching writing--"Lack of time to evaluate student writing." This problem was mentioned frequently in meetings of the language arts teachers and the Writing Committee, as well. Thus, there appears to be consensus on the lack of time for evaluation as a critical problem for teaching writing.

Teachers pointed out that every time they give a writing assignment, they then have a set of papers to evaluate. That could mean a set of 25 papers for an elementary school teacher who teaches one language arts class a day. But if that same teacher had the students write for a science or social studies activity, then the number of papers would quickly multiply.

For junior and senior high English teachers, who typically teach five classes a day, one writing assignment for a class each week would result in 100 to 150 papers to read. If the assignment were a multi-paragraph essay or a multi-page paper, the sheer volume of material to be read and evaluated is overwhelming.

The teachers agreed that having one planning period a day simply does not provide adequate time to evaluate all the student writing in addition to all the other duties that teachers have during planning time such as planning lessons, making phone calls to parents, completing attendance reports and other school forms, and meeting with other teachers.

The second concern of teachers during the second and third year of the study was "Inadequate time to plan appropriate writing activities." In the workshops and training programs when teachers were instructed in process-based writing, teachers agreed that they could see how writing assignments could become a more integral part of their curriculum. However, they explained that developing writing assignments that were an integrated part of a unit--rather than just an isolated writing assignment--would require additional planning time. Teachers said that they would need additional time to modify and adjust their existing units of instruction and time to develop new units that would include process-based writing assignments.

"Lack of adequate class time to complete writing activities" was a problem ranked second or third all three years. Teachers said that a key problem for

increasing the amount of student writing was the lack of adequate time. This problem is two-fold.

First, teachers, especially those teachers involved in preparing students for the state proficiency test or meeting Basic Skills First requirements, said that their curriculum was so structured that they did not have the time or flexibility to work in regular writing assignments. These teachers spend so much time on reviewing grammar and testing and retesting students for individual skills that they do not have time to include an emphasis on writing activities.

Second, teachers said that class periods often were not long enough to have a well developed writing activity following the sequential steps advocated in process-based writing. Often, there is inadequate time for a pre-writing activity to lead into an in-class writing assignment. When students work in pairs or in small groups reading and editing their classmates' papers, a class period is inadequate for the whole writing process to be followed.

The size of language arts classes also was a serious problem, according to the language arts teachers. They noted that the larger the class, the more papers that had to be evaluated for each assignment. At the junior and senior high levels, the difference between 22 and 27 students in English classes, makes a difference of 25 students for the day--and 25 papers for each assignment--the equivalent of another class section.

"Lack of suitable materials to teach writing" was the least concern every year. Teachers said that the materials they had were suitable or could be adapted to be used for writing activities.

Also, it should be noted that by the second year, "Lack of training in how to teach writing" was not considered a problem, whereas the first year of the study, this was the third greatest problem.

Table 2-2
Rank Order of Problems with Teaching Writing

First Year	Second Year	Third Year
Time for Evaluation	Time for Evaluation	Time for Evaluation
Time to Complete	Planning Time	Planning Time*
Lack of Training	Time to complete	Time to complete*
Planning Time	Large Classes	Large Classes
Inconsistency*	Inconsistency	Standards
Large Classes*	Standards	Inconsistency
Standards	Lack of Training	Lack of Training
Materials	Materials	Materials

In terms of their ratings of the importance of these problems, no significant differences appeared between trained and untrained teachers after the first year of the study.
*Indicates ties

Assessment of Language Arts Instruction Priorities

In the second and third years of the study, teachers were asked to rank 14 different language arts priorities. Choices were stated as follows: Grammar, Literary Appreciation, Essay Writing, Composition, Drama, Creative Writing, Research Writing, Reading Poems, Reading Short Stories, Reading Novels, Using a Computer, Using a Word Processor, Watching Television. Responses were then analyzed based on teacher training as presented in Table 2-3. Two major findings should be noted. The second year of the study, the top priorities were quite similar regardless of the teachers' training in process-based writing instruction. The untrained teachers ranked "Grammar" and "Composition" as the first priorities. The trained teachers ranked "Composition" as the first priority, and "Grammar" as the third priority. In the third year of the study, the untrained teachers continued to rank "Grammar" as the first priority and "Composition" fell to the sixth priority. However, the trained teachers again ranked "Composition" as the first priority, but "Grammar" fell to the fifth place. These findings suggest that during the course of the study, trained teachers became more firmly committed to teaching composition in an integrated manner, treating grammar and mechanics as only one part of the entire writing process, whereas untrained teachers continued to consider grammar an independent component of the language arts curriculum.

Table 2-3
Teacher Assessments of Language Arts Priorities by Teacher Training

Second Year		Third Year	
Untrained	Trained	Untrained	Trained
Grammar*	Composition	Grammar	Composition
Composition*	Short Stories	Lit. App.	Short Stories
Short Stories	Grammar	Creative Writing*	Lit. App.
Novels	Lit. App.	Research Writing*	Essay Writing
Essay Writing	Essay Writing	Short Stories	Grammar
Lit. App.	Creative Writing	Composition	Novels
Creative Writing	Poetry*	Essay Writing	Creative Writing
Research Writing	Novels*	Novels	Poetry
Poetry	Public Speaking	Poetry	Research Writing
Public Speaking	Drama	Public Speaking	Public Speaking
Drama	Research Writing	Drama	Word Processor
Computer	Word Processor	Computer	Computer
Word Processor	Computer	Word Processor	Drama
TV	TV	TV	TV

*Indicates ties.

Comparison of Parent and Teacher Attitudes about Language Arts Priorities

When teacher responses to these 14 language arts pririties are compared to parents' responses to the same items, some interesting differences emerge (See Table 2-4). Teachers and parents differed in their ranking of the top priority for language arts instruction. In the second and third years of the study, teachers as a group ranked "Composition" as the top priority. All three years the parents were surveyed, they ranked "Grammar" as the top priority, with "Composition" as the second priority. The teachers ranked "Grammar" as the fourth priority the second year of the study and the third priority the third year of the study. In both years, the teachers ranked "Literary Appreciation" ahead of "Grammar," whereas parents never ranked "Literary Appreciation" more than the seventh priority.

Research has consistently shown that grammar instruction which consists of drill and practice grammar exercises does not necessarily transfer into improved grammar in the students' writing or speaking. This is one of the reasons cited for using process-based writing instruction, where mechanical skills such as grammar and spelling are treated as one part of the whole, integrated writing process. Teachers trained in process-based writing, as demonstrated in Table 2-3, adopted this line of reasoning, and because most teachers were trained by the third year of the study, this view dominates teacher responses and accounts for the lower ranking of "Grammar" among teachers. However, parents were educated following a different approach to language arts instruction, one of repeated grammar drill and practice.

Another difference between teachers' and parents' rankings appeared in their views of computer instruction. "Computer" and "Word Processing" were two of the 14 topics that the two groups were asked to rank. The first year of the study, parents ranked "Computer" as the third priority and "Word Processing" as the eleventh priority. By the third year, "Computer" was the ninth priority with "Word Processing" remaining the eleventh priority. In 1984, when the parents first completed the questionnaire, computers were just entering the scene at home and the schools. Parents may have considered computers to be a potential cure-all for language arts instruction and an important aspect of contemporary literacy. Two years later, after having more experience with computers and being aware of computer use in the schools, parents may have realized that the instructional value of computers in language arts instruction was more limited than they first imagined, thus, making language arts instruction in "Computer" a lower priority.

Teacher assessment of "Computer" and "Word Processing" as priorities in language arts instruction did not change much during the study. When first surveyed about language arts priorities, teachers ranked "Computer" as the eleventh priority and "Word Processing" as the thirteenth priority. The next year, the order of the two topics was reversed. Teachers' low ranking of computers and word processing may stem from two main reasons. First, most language arts teachers had not received training in the use of computers and were hesitant or unable to use them in their classrooms. Second, the teachers knew the actual number of computers and necessary word processing software available in the schools were limited. These limitations were likely to cause the teachers to be cautious in assessing the importance of the computer in language arts instruction.

Both the teachers and the parents ranked "Television" as the last priority for language arts instruction. Drama also received a low ranking by teachers and parents. For two years, teachers ranked "Drama" as the twelfth priority in terms of importance. The parents ranked "Drama" as the thirteenth priority all three years.

Table 2-4
Parent and Teacher Assessments of Language Arts Instruction Priorities

Parents			Teachers	
Year 1	Year 2	Year 3	Year 2	Year 3
Grammar	Grammar	Grammar	Composition	Composition
Composition	Composition	Composition	Short Stories	Lit. App.
Computer	Research	Essay	Lit. App.	Grammar
Research	Essay	Research	Grammar	Short Stories
Creative	Creative	Creative	Creative	Essay
Essay	Novel	Novel	Essay	Creative
Lit. App.	Short Stories	Lit. App.	Novels	Novels
Speech	Computer	Short Stories	Poetry	Research
Novel	Lit. App.	Computer	Speech	Poetry
Short Stories	Speech	Speech	Research	Speech
Word Processor	Word Processor	Word Processor	Computer	Word Processor
Poetry	Poetry	Poetry	Drama	Drama
Drama	Drama	Drama	Word Processor	Computer
TV	TV	TV	TV	TV

Part 3

Limitations of the Study

In any research study, it is important to note what limitations may qualify its results. The three-year study of writing in the Oak Ridge Schools had several important limitations:

1. Inconsistency in writing training for teachers. During the three years of the writing study, language arts teachers were encouraged to participate in training in process-based writing. This training was offered in a variety of ways: as a credit course taught by an instructor from the University of Tennessee, as an in-service session taught during the school year by trained Oak Ridge teachers, as a one-week workshop taught during the summer by trained Oak Ridge teachers. All training sessions were designed to introduce teachers to process-based writing and all sessions required that teachers participate in the writing process themselves. However, all sessions were not taught by the same instructors, did not have the same assignments, and did not follow the same curriculum. Consequently, the training was not uniform.

2. The difficulty in developing comparable writing prompts. Each year, the Writing Committee--made up of language arts teachers representing primary, elementary, junior high and senior high levels--determined the topic for the systemwide writing sample and then wrote the exact wording to be used as the prompt for the assignment. The scores on the writing sample assessments the second year were lower than the first or second year. This may be due to the fact that the topic selected by the committee the second year was more limiting to the student than the topics selected for the first and third years.

3. The difficulty in retaining students in the sample during the three years of the study. Initially, about 90 students were selected from each grade level, grades 3-10. This number was selected in order to retain at least 50 students at each grade level for all three years of the study. We anticipated losing about 10 to 15% of the student sample each year as a result of normal attrition. However, even the first year of the study the sample size was considerably lower than 90 students per grade level because of various problems in locating individual students. For example, students whose names had changed as a result of a parent remarrying were difficult to identify, and students who preferred to use a nickname or a first name only, made it nearly impossible to locate their papers. Such problems reduced the initial sample size significantly. Normal attrition, with students moving away or dropping out of school, then took its toll on the remaining students. In addition, in the third year of the study, there was inconsistent teacher follow-up on absences so that some students who were not in class during the week of the writing sample never completed it. As a result, by the end of the third year, writing samples for nearly half of the students were missing.

Part 4

Recommendations

Recommendations of the Writing Committee

1. The committee recommends that three groups be appointed at each of the levels (elementary, junior high and senior high schools) to analyze the effects of scheduling and class load for programs which promote writing and composition. This recommendation is supported by the "Time for Results" priority number one.

2. The committee recommends continuing the financial and time support for teacher training in writing. Regularly scheduled inservice should be offered as refresher sessions for trained teachers; financing should be made available to teachers to attend conferences to learn new research and techniques related to the teaching of writing; summer sessions should be budgeted and scheduled for new staff members in the Oak Ridge Schools.

3. The committee recommends increased financial support for student writing products such as classroom writing projects, class newspapers and literary magazines. Additional clerical assistance is needed for typing and copying "published" student work.

4. The committee recommends continuous education of parents and the public about the process approach to teaching writing. In order to develop more parent awareness and support of the schools' efforts to improve writing instruction, comprehensive communication should be promoted between the schools, the parents and the community.

Appendices

Appendix A
Student Writing Assignments

1984 Writing Assignment

Grades 3-5: Each of you has many television programs that you watch and enjoy. I want you to choose a favorite character from one of those programs. I want you to describe this character and explain why you like the character so much.

Grades 6-8: Television plays a big part in our lives today. There are many reasons that we watch television. Think of one or two of these reasons and write about them in one or two well developed paragraphs.

Grades 9-12: In a multi-paragraph paper, discuss the influence of television on you and your family or on American society. Be specific.

1985 Writing Assignment

Grades 3-8: Each of you can think of many books that you read and enjoy. Choose a favorite character from one of those books. Describe this character and explain why you like the character so much.

Grades 9-12: Each of you can think of many books that you read and enjoy. Choose a favorite character from one of those books. In a multi-paragraph paper, discuss why this character appeals to you.

1986 Writing Assignment

Grades 3-5: Choose a real person or a character from a book, movie, or TV show who you like. Explain why you like him or her. Give more than one reason.

Grades 6-8: Select a real person or a character from a book, movie or TV show who has had an influence on you. Explain this influence. Be specific.

Grades 9-12: Select a real person or a character from a book, movie, or TV show who has had an influence on you. Explain this influence in a multi-paragraph essay. Be specific.

Appendix B
Assessment Rubric

6 A 6 paper has most of the following characteristics:

Focus: appropriate central idea (thesis) and takes a position on the topic which remains consistent

Organization: displays visible, consistent levels of abstraction (parallelism in logic) and correct paragraph structure

Development: provides adequate and appropriately expanded examples/proof to support thesis
**establishes a clear relationship between examples and thesis

Sentence Structure: displays correctness and variety

Mechanics: displays correctness in spelling and punctuation

Vocabulary: is appropriate and varied--"sparkles" and/or "fluent"

5 A 5 paper has most of the following characteristics:

Focus: appropriate central idea (thesis) and takes a position on the topic which remains consistent

Organization: displays visible, consistent levels of abstraction and correct paragraph form

Development: provides some examples and details but not as concrete as a 6

Sentence Structure: correct but not polished sentence structure

Mechanics: displays correctness in spelling and punctuation

Vocabulary: appropriate but not succinct

4 A 4 paper has most of the following characteristics:

Focus: central idea may be stated or implied

Organization: pattern has some degree of success although it may have weaknesses in levels of abstraction

Development: contains appropriate examples but inadequately developed (expanded)

Sentence Structure: displays correctness but lacks variety

Mechanics: although errors in punctuation and spelling exist, they do not interfere with the meaning

Vocabulary: commonplace

3 A 3 paper has most of the following characteristics:

Focus: central idea may be stated or implied but deteriorates

Organization: repetitious, "stream-of-consciousness" pattern and flawed in paragraph form; may mix levels of abstraction inappropriately (apple, orange, pork chop)

Development: examples are inadequate and undeveloped (mere listing) no relevance between central idea and examples is established

Sentence Structure: may have some fragments and run-ons, but they do not interfere with meaning

Mechanics: although errors in punctuation and spelling exist, they do not interfere with meaning

2 A 2 paper has most of the following characteristics:

Focus: is absent or fails to address the complete topic

Organization: omission of levels of abstraction

Sentence Structure: contains many fragments and run-ons and has poor syntax and grammar; monotonous sentence pattern

Development: examples are inadequate, inappropriate, and undeveloped

1 A 1 paper has most of the following characteristics:

Focus: irrelevant to topic

Organization: random thoughts and an absence of a pattern of logic

Development: simplistic, undeveloped, random examples/details and/or implied reasons

Appendix C
Types of Computers in the home

Because the Oak Ridge Schools have included instruction in computer use as part of the curriculum at the elementary school, junior high school, and senior high school levels, an item was included on the parental questionnaire to determine how many homes had computers.

In 1984, during the first year of the study, 49% of the responding parents said that they had at least one computer in the home. By 1986, 63% of the responding parents said that they had a computer in the home. Parents, in the 1984 study, were asked to indicate the brand name of the computer they had. Parents listed 26 different types of computers. (See Table 3-1) The Apple was the most frequently named computer, although only 8.5% of the homes had that brand of computer.

Table 3-1
Types of Computers in the Home 1984

Apple 1[1]
Commodore
Texas Instrument
Vic 20
TRS
IBM
Franklin Ace
Compad
Odyssey
Timex 1000
Sorcerer
Kaypro
Adam
Columbia
Sinclair
Altos
Corona
Digital
Morrow
McIntosh
RCA
Epson
Magnavox
Osborn

[1]Listed in the order of most frequently mentioned to least frequently mentioned.

Appendix D
Oak Ridge Schools
Writing Committee

1987-88

Julie Dodd	ORHS
Ann Johnson	ORHS
Carol Yoakley	ORHS
Lois Nolan	ORHS
Martha Deaderick	JJHS
Naida Finane	ORHS
Jane Grossbeck	RJHS
Donna Sutton	RJHS
Betty Felte	GW
Candace Boyd	GW
Bobbie Nielson	GW
Carolyn Stevens	WL
Ginny Bowers	WB
Theresa Pickerell	L
Elizabeth Breaseale	L
Joan Vicary	SAB
Jinx Bohstedt	SAB